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Patent

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First Named Inventor: GARBER, SHARON R.

Application No.: 09/368817 Group Art Unit: 2876

Filed: August 5, 1999 Examiner: Ahshik Kim

Title: RADIO FREQUENCY IDENTIFICATION SYSTEMS
APPLICATIONS

BRIEF ON APPEAL

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May 10, 2004

Date

Colleen M. Wagner
Signed by: *Colleen M. Wagner*

Dear Sir:

This is an appeal from the Office Action mailed on September 10, 2003. This Brief is being filed in triplicate. The fee required under 37 CFR § 1.17(c) for the appeal should be charged to Deposit Account No. 13-3723. This Brief is believed to be timely submitted with a petition for a one (1) month extension of time submitted herewith. It is believed that no additional fee is due; however, in the event a fee for an additional extension of time is required, please charge the fee to Deposit Account No. 13-3723.

Appellants request the opportunity for a personal appearance before the Board of Appeals to argue the issues of this appeal. The fee for the personal appearance will be timely paid upon receipt of the Examiner's Answer.

05/13/2004 AWONDAF1 00000083 133723 09368817

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REAL PARTY IN INTEREST

The real party in interest is 3M Company (formerly known as Minnesota Mining and Manufacturing Company) of St. Paul, Minnesota and its affiliate 3M Innovative Properties Company of St. Paul, Minnesota.

RELATED APPEALS AND INTERFERENCES

Appellants are unaware of any related appeals or interferences.

STATUS OF CLAIMS

The patent application, as filed, included claims 1-50. Claims 7-19 were cancelled. Claim 23 was amended. Claims 24-25 were cancelled. Claims 36-39 were cancelled. Claim 40 was amended. Claims 44-50 were cancelled. Claims 1-6, 20-23, 26-35, and 40-43 are pending in this application, currently stand rejected, and are the subject of this appeal.

STATUS OF AMENDMENTS

An amendment to claim 27 was filed after the final rejection on February 10, 2004 to help clarify the claim. This amendment has neither been accepted nor denied at the time of filing this appeal brief.

SUMMARY OF THE INVENTION

The present invention relates to RFID devices, including handheld RFID devices, and applications for such devices. The devices and applications may be used in connection with items that are associated with an RFID tag. The devices and applications are described with particular reference to library materials such as books, periodicals, and magnetic and optical media. However, other applications for the present invention are also envisioned.

Libraries constantly receive a large volume of library materials that are returned by patrons who have finished using those materials. To enable subsequent patrons to locate and check-out the materials again, the materials must be sorted and shelved accurately and quickly, and the patrons must often be assisted in locating the materials once they have been replaced.

The various embodiments of the RFID-related inventions described herein relate directly to this process, and may be used together or separately, as desired.

A component of the system described herein is an RFID device, which is either portable (preferably hand-held) or stationary, of the following type. The RFID device is equipped to read information from an RFID tag on an item, such as a patron card, book, or other material. Preferably, the information read from the RFID tag includes a designation of media type (magnetic, print, or optical, for example), which can be used to insure the proper subsequent processing of the item. After the RFID device reads the RFID tag, the device transmits the item identification information to a computer having software provided by a library automation vendor, or LAV.

One embodiment of the present invention uses an RFID device to provide sorting assistance to library staff when they are sorting items returned to the library. The user interface for the RFID device is designed both to communicate the status of searching and to allow the user to enter data. Entering data may include switching the RFID device among various search modes and entering data specific to a task (for example, to check out an item, or to put an item on hold). Feedback to the user is preferably provided through a combination of sound, lights and a display. For a number of applications, it is desirable to provide a portable, preferably hand-held, RFID device. The hand-held RFID device is capable of searching among shelves, bins, piles and library carts. It can essentially search wherever it can be positioned close enough to the items. It is capable of identifying multiple items that are within the range of the device. These and other features make the inventive portable RFID device a valuable library tool.

Each library designates their own sorting categories including, for example, adult non-fiction, children's fiction, materials that are being held, and materials that were or will be on ILL (inter-library loan) to another library branch. When an operator begins the sorting operation, he or she can use the RFID device to scan the RFID element associated with a material, and receive, for example, a visual or audible signal of the category to which the material belongs, and the cart or container holding materials within that category, as shown in Figure 9. For example, the operator may scan a book, learn that it is in the children's fiction category, and learn that it belongs on cart number 123. The identification of the material, category, and temporary (initial) or permanent (final) location of the item may occur in response to information obtained from the RFID element, from LAV software, from a separate sorting database, from another source, or

from a combination of the foregoing. A separate sorting database provides potential advantages of performance and flexibility.

Figure 9 shows an example of the display of sorting information included in the present invention. In this case, it indicates both a fiction sort and a specific library cart location on a display attached to a device. The same display could stand alone, independent of the device, and be used for feedback with the other identification options described above. Other methods of display could also be used. LEDs could be attached to each shelf on each cart. The sorting processor could send a signal to the appropriate shelf, causing the LED to be turned on. Audio signals also could be used. Optionally, there could be RFID readers attached to the carts that verify placement of the item on the cart. This would assure that the item was placed properly and help in tracking operations.

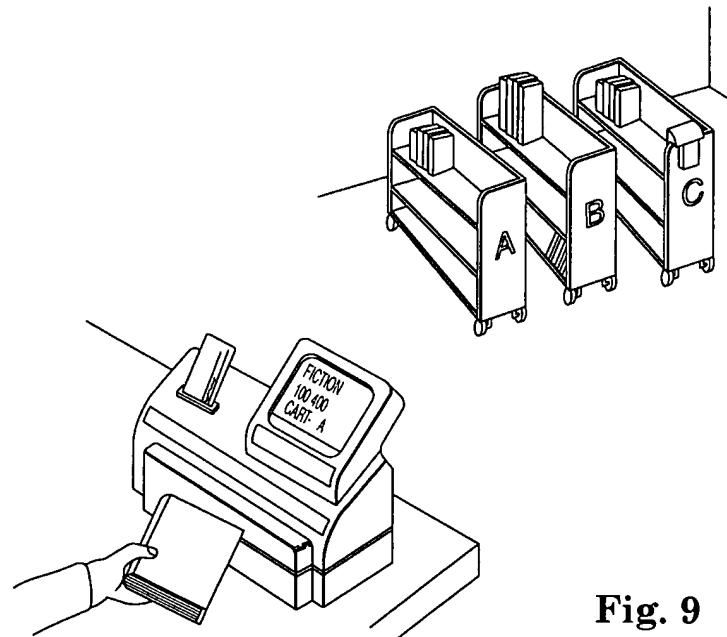
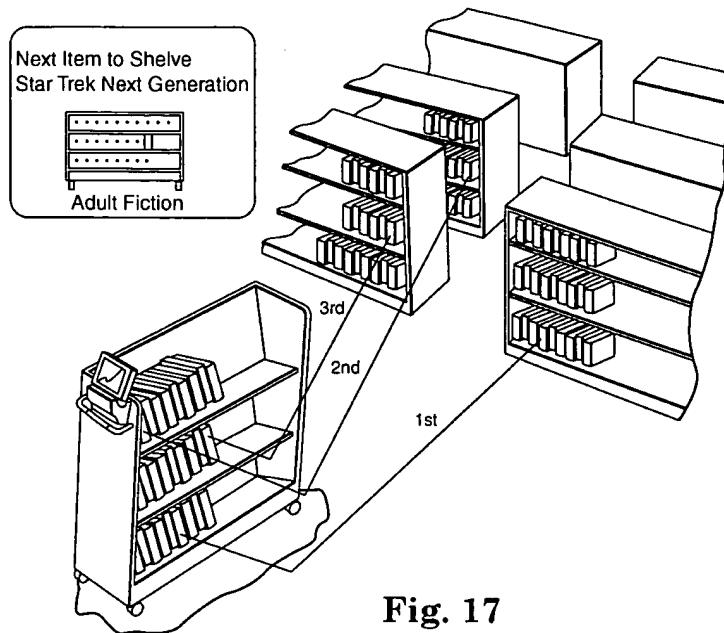


Fig. 9

In another embodiment, a portable RFID device having a display may be used to provide the shelf order information, rather than a paper copy. The display could be mounted on the cart as shown in Figure 17, worn by the user, or held in the user's hand. As shown in that illustration, the RFID device display may inform the user of the next item to be shelved, its location on the cart, and its location on the shelf. It may be preferable to provide a portable RFID device that provides shelf order information to the user, and accepts input from the user. Input could include the ability to scroll items, to indicate when an item has or has not been reshelved, to ask for more information about a particular item or to display a summary list of the contents of a cart.

**Fig. 17**

Another embodiment enables a user to use a portable (preferably hand-held) RFID device to locate the correct place on the shelf for a given item. The user identifies an item to shelve and then passes the hand-held device across a row of items on a shelf. As the correct position for shelving the new item is detected, feedback is given to the user. Feedback can be provided in a combination of ways, including on a display, with audio feedback and/or with lights (LED's) on the hand-held device.

This function can support “free-shelving,” which is most typical in libraries, wherein the item may be placed on any shelf so long as it follows and is preceded by the correct items in shelf order. In a more constrained shelving system, items must be placed in a specific location on a shelf. Free shelving is more typical and requires more processing to produce the right shelf location for an item. When constrained shelving is used, LED's can be added directly to shelf locations and they can light up to indicate where an item should be placed. Even in the free shelving scenario, LED's can be added to a shelf, but determining which shelf LED to light is a dynamic decision based on what is on the shelf at the time. Underlying this function is also an understanding of proper shelf order. Each library indicates how they want items shelved (by, for example, Dewey Decimal number, or author's last name). These shelving schemes can vary across the various sections in a library. This function could also support totally unconstrained shelving, in which items are shelved in essentially random order. This is commonly done for

shelves of materials being held, and may be applicable in other situations as well. In this situation, an RFID reader can be used to find an item from the unsorted shelf.

Benefits of this embodiment include that this system can help a shelver identify where to shelve an item. This can be particularly useful for the novice shelver, which may speed up the shelving operation. Once the shelver is close to the location, the device can quickly zero in on the precise shelf location. An additional a feature of the embodiments described in this section is the ability in certain of the embodiments for a user to obtain information in real time, as opposed to having to download or print out the information.

In another embodiment, a smart cart may be used in combination with a hand-held RFID device of the type described above and shown in Figure 12. An operator may use the hand-held RFID device and pass it by the cart in a particular order (for example, from left-to-right, and top-to-bottom). As the RFID device passes by the items, the device reads the items having RFID tags, and records and stores their positions on the cart. The RFID reader identifies the cart by reading a tag on the cart or by entering the cart identification information into the hand-held unit.

One embodiment of a smart cart system is as follows. The user initiates a “cart reading operation” via a keyboard or button interaction. The cart optionally has an RFID tag associated with it. If a tag is available, the software initiates an RFID interrogation to establish the identity of the cart. Alternatively, the user initiating the cart reading operation may input the cart identification information into the RFID device manually. The software sends the cart ID to the location database, and then interrogates each shelf. The identification of each item on the shelf is sent to the software which then sends the information to the location database. After interrogation is complete, the software can optionally send the information from the location database to the LAV software to update the latter.

Many patrons have difficulty navigating within the library. Difficulties include finding the desired building, the desired floor of the library, getting to the desired section, finding the desired shelf and ultimately locating the materials of interest. Some patrons have specific items in mind, such as titles, whereas others are more interested in subjects, such as Revolutionary War History. The embodiments of the invention described in this section assist library patrons with navigation, and provide guidance that is visual, interesting, and perhaps even fun.

Figures 18A and 18B illustrate one embodiment of the invention, in which a card having an RFID element is loaded, or programmed, with one or more items of interest as shown in

Figure 18A. Once the card is loaded with the desired information, the patron can use it to navigate within the library as shown in Figure 18B. RFID devices may be strategically placed throughout the library, and when an RFID card is presented to one of these readers, it indicates to the patron where the item(s) of interest can be found relative to the reader's location. The device might include a display which could be complete with map and graphical instructions for finding the item, or perhaps only a series of LED lights that light up to acknowledge that the item is with the aisle nearest the device, or that light up a part of a library map where the item can be found. The information provided depends on how close the patron is to the target item(s). For example, it might indicate to go to another floor of the library (when far from target) or half-way down an aisle to a specific shelf when the patron is close to the item of interest.

ISSUES ON APPEAL

1. Whether claims 1-6, 26-29, and 34-35 are being anticipated under 35 USC § 102(e) by Bowers et al. (US 5,963,134).
2. Whether claims 20-23 are obvious under 35 USC § 103(a) in view of Bowers et al.
3. Whether claims 30 and 32-33 are obvious under 35 USC § 103(a) in view of the combination of Bowers et al. and Frich (U.S. Pat. No. 6,074,156).
4. Whether claims 40 and 41 are obvious under 35 USC § 103(a) in view of the combination of Sone (US 2002/0,035,560 A1) and Cannon et al (EP 0,794,507 A2).
5. Whether claim 42 is obvious under 35 USC § 103(a) in view of the combination of Sone, Cannon et al and Marsh et al (EP 0,494,114)
6. Whether claim 43 is obvious under 35 USC § 103(a) in view of the combination of Sone, Cannon et al and Bowers et al.

GROUPING OF CLAIMS

The appealed claims will stand or fall together with the independent claims and dependent claims 2, 4, 27 and 28 have been argued separately for patentability. No admission is being made with respect to the obviousness of the subject matter of the non-argued dependent claims.

ARGUMENTS OF APPELLANTS**ISSUE 1 (CLAIMS 1-6, 26-29, AND 34-35)****I. Claims 1-6**

Claims 1-6 were rejected under 35 USC § 102(e) as being anticipated by Bowers et al.

Applicants disagree with this rejection, based on the following arguments given in the different sections below:

A. In regard to claims 1-6, the Office Action mailed September 10, 2003 stated that Bowers et al. discloses an RFID device that comprises an indicator for indicating information regarding one or both a class of materials (i.e., KA-452-110011, etc.) to which the item 54 belongs, and a desired location for that item (i.e., main, engineering, etc.) for that item 54. Applicants respectfully disagree for at least the following reasons.

First, contrary to the Examiner's assertion, Bowers et al. does not disclose an RFID device that comprises an indicator for indicating information. Instead, Bowers et al. teaches a fixed interrogator 43 or a portable RFID scanner 42, which extracts the unique programmed serial number from the RFID tag 54 on the article 22. Then, the serial number is entered into a database record 66 stored on a computer 48 or in a remote computer. (See column 9, lines 41-67 and column 10, lines 1-48.) Then, the user may receive indication of information about the article from the database associated with a computer by a display panel of the monitor connected to the computer maintaining the database. Optionally, the user may receive indication of information about the article from a print out from a printer connected to the computer maintaining the database. (See column 11, lines 63-67 and column 12, lines 1-2). Therefore, it is the database, which is separate from the RFID device, which indicates information about the item, not the RFID device itself. In contrast, claim 1 recites an RFID device that comprises an indicator for indicating information. The specification teaches the useful features of such an RFID device, for instance on page 20, lines 21-27, which states as follows:

In operation, a particularly useful feature of a hand-held device is obtaining real-time information regarding an item that has been scanned by the device. That is, the hand-held device obtains information from the RFID tag, and either immediately displays that information, or immediately displays information stored within the hand-held device that is related to the tagged item. This is in contrast to devices that must be docked with or otherwise communicate with a separate database of information before that information can be displayed for the user.

Applicants argue that the inventory system of Bowers et al. is just like the devices described in the specification that must be docked with or otherwise communicate with a separate database of information before that information can be displayed for the user. Bowers' fixed interrogator 43 or a portable RFID scanner and database stored on a separate computer are unable to provide real-time information to the user regarding the item scanned. Therefore, contrary to the Examiner's assertion, Bowers et al. does not disclose an RFID device that comprises an indicator for indicating information.

Second, Bowers et al. does not disclose an RFID device that comprises an indicator for indicating information regarding one or both of (i) a class of materials to which the item belongs, and (ii) a desired location for that item. Instead, as mentioned above, the interrogator or scanner extracts the serial number, and it is the database 66 associated with the computer (which is remote from the RFID device) that is the indicator of information, not the RFID device. The database indicates the article's Dewey Decimal System call number, a Library of Congress call number, ISBN number or an arbitrarily assigned number and the predetermined location of where the article is currently stored. (See column 10, lines 28-40.)

In contrast, claim 1 recites an RFID device that comprises "(b) an indicator for indicating information regarding one or both of (i) a class of materials to which the item belongs, and (ii) a desired location for that item. An example of such an RFID device is taught in the specification, for instance on page 21, lines 7-18, which states as follows:

Each library designates their own sorting categories including, for example, adult non-fiction, children's fiction, materials that are being held, and materials that were or will be on ILL (inter-library loan) to another library branch. When an operator begins the sorting operation, he or she can use the RFID device to scan the RFID element associated with a material, and receive, for example, a visual or audible signal of the category to which the material belongs, and the cart or container holding materials within that category, as shown in Figure 9. For example, the operator may scan a book, learn that it is in the children's fiction category, and learn that it belongs on cart number 123. The identification of the material, category, and temporary (initial) or permanent (final) location of the item may occur in response to information obtained from the RFID element, from LAV software, from a separate sorting database, from another source, or from a combination of the foregoing.

The system described in Bowers et al. does not include an RFID device with such an indicator. Specifically, the RFID device of Bowers et al. does not indicate, for a particular item, the class of materials to which that item belongs, nor does it indicate the desired location for that

item. Regarding the point about class of materials to which that item belongs, Bowers et al. does teach “item identification information,” such as “a Dewey Decimal System call number, a Library of Congress call number, ISBN number or an arbitrarily assigned number,” but this information does not readily convey to the user what class of materials to which that item belongs. For example, Figure 4 of Bowers et al. illustrates an example of its identification information in its database record, KA-452-1100 1, KA-456-1122 1, KA-4561122 2, QR-123-340 1. It would be difficult to a user to readily understand what class of materials that item belongs to, such as children’s fiction, by reading such identification information. Regarding the point about the desired location for that item, Bowers et al. appears to enable the user to determine the predetermined location of a tagged item, but not the desired location for such an item. (See Bowers et al., column 10, lines 35-40 and 55-59.) This is an important distinction, because it is useful in, for example, a library environment to be able to interrogate an RFID-tagged item and then see an indication of where that item belongs within the library. Since, as described in the specification, each library typically designates its own sorting categories such as adult non-fiction, children’s fiction, materials that are being held, and materials that were or will be on ILL (inter-library loan) to another library branch, it is helpful to the operator to scan a book, learn that it is in the children’s fiction category, or learn that it belongs on cart number 123, both being desired locations in the library for that book. Moreover, when referring to a “predetermined” location, Bowers discusses this location in the context of a large university or large governmental entity, referring to different department-specific or branch libraries, most likely located at geographic locations. (See Bowers et al., column 10, lines 35-44.) Bowers teaches the benefits of such additional predetermined location information is to properly identify the articles with such respective locations. In contrast, the present invention is designed to indicate the specific location of the item on a shelf or on a cart.

Applicants note that the Examiner did not respond in the Final Office Action mailed September 10, 2003 to either of the arguments presented above, even though both arguments were presented in Applicants’ previous Office Action Response faxed on May 19, 2003. Instead, the Examiner’s response in the Final Office Action mailed September 10, 2003 seems only to be focused on whether or not the RFID tag itself carries extended information, which does not address either of the arguments presented above. Without more explanation, Applicants cannot understand how this issue raised by the Examiner addresses either of the arguments presented

above. Moreover, whether or not the RFID tag itself carries extend information is irrelevant, since it is not a claimed element within the claim.

Therefore, contrary to the Office Action's assertion that all elements of claim 1 are disclosed in Bowers et al., element (b) of claim 1 is not; the rejection is unsupported by the art and should be reversed.

B. The Response to Arguments section of the Final Office Action mailed September 10, 2003 stated that column 10, lines 22+ of Bowers et al. teaches that the RFID tag 54 carries identification information – whether it is an identification number or more detailed information. This section continues in stating that “Although the database residing on host machine is referred as information storage location, the extended information can certainly be loaded in RFID tag itself,” relying on column 10 lines 35-37 of Bowers et al. Applicants respectfully disagree for the following reasons.

First, column 10, lines 22+ of Bowers et al., which is specifically cited and relied upon by the Examiner to support his arguments, does not teach an RFID tag that carries anything more than an identification number. Instead, this section of Bowers et al. is directed at discussing the database records, which are separate from the RFID tag and separate from the RFID device. This section of Bowers et al. does teach that the database records do include a field for the serial number of the tag and fields for other information. This section of Bowers et al. does not teach there is any detailed or extended information beyond the serial number on the RFID tag itself.

Second, column 10, lines 35-37 of Bowers et al., which is specifically cited and relied upon by the Examiner to support his arguments, does not teach that extended information may be loaded in the RFID tag itself. Instead, in this section Bowers et al. is directed at discussing only the database records.

Lastly, whether or not the RFID tag itself carries extend information is irrelevant, since it is not a claimed element within the claim.

Therefore, none of the sections relied upon in the Office Action mailed September 10, 2003 disclose what the Examiner asserts they do and even if they did, it would be irrelevant to the claimed invention, and thus, the rejection is unsupported by the art and should be reversed.

C. The Response to Arguments section of the Final Office Action mailed September 10, 2003 stated, “Whether the tag carries just an identification number as opposed to ‘extended information’, they are, in the Examiner’s opinion, not patentably distinct. Such variation – how much information to carry on RFID tag – is in most case determined by user’s preference or particulars of their embodiment.” Applicants respectfully disagree for the following reasons.

It seems as if the Examiner is focusing on the issue of whether a certain amount of information is included in the tag or not, and asserting that patentability turns on this issue for some unknown reason. As pointed out in the Response filed May 19, 2003, and reiterated above in Sections A and B, Bowers et al. does not teach an RFID device that comprises element b) of claim 1: an indicator for indicating information regarding one or both of (i) a class of materials to which the item belongs, and (ii) a desired location for that item. MPEP §2131 states:

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently describe in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). “The identical invention must be shown in as complete detail as contained in the ...claim.” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claims.

As illustrated in section A above, the system described in Bowers et al. does not include an RFID device with an indicator for indicating information. Instead, Bowers et al. teaches it is the database that is separate from the RFID device, which indicates information about the item, not the RFID device itself. In addition, as illustrated in section A above, the RFID device of Bowers et al. does not indicate, for a particular item, the class of materials to which that item belongs, nor does it indicate the desired location for that item. Therefore, contrary to the Office Action’s assertion that all elements of claim 1 are disclosed in Bowers et al., element (b) of claim 1 is not; the rejection is unsupported by the art and should be reversed.

D. Regarding claim 2, the Office Action mailed September 10, 2003 states that Bowers et al. provides an indicator that provides at least one of an audible and a visual indication, relying on Figures 4 and 7, column 7, lines 65-67 and column 10, lines 35+ of Bowers et al. Applicants disagree. These sections of Bowers et al. relate to the database or a dumb pedestal, not the indicator portion of an RFID device. Specifically, the dumb pedestal taught in this section sounds an alarm if any articles are removed from the periodical room. It does not sound an audible indication

regarding one or both of the (i) class of materials to which the item belongs, and (ii) a desired location for that item, as recited in claims 1 and 2.

Regarding claim 4, the Office Actions states that Bowers et al. provides information that is obtained from memory within the RFID device, relying on Figures 1 and 3 and column 9, lines 15-36. Applicants disagree. These sections of Bowers et al. make no mention whatsoever of obtaining from the *memory within the RFID device* one or both of (i) information from the class of materials to which the item belongs, and (ii) a desired location for that item. Instead, these sections only detail the schematic of the reader or interrogator.

Therefore, dependent claims 2 and 4 recite elements not disclosed by Bowers et al. and should be independently allowable.

E. As a result, based on at least the arguments above in Sections A-C, claim 1 is not anticipated by Bowers et al., nor has the Examiner met his burden in establishing such a rejection, and the rejection should be reversed. Claims 2-6, which depend from claim 1 and add further limitations, are likewise not anticipated by Bowers et al. and the rejection should be reversed. Moreover, claims 2 and 4 are independently allowable for the reasons given in Section D. Thus, for the above reasons, the rejection claims 1-6 under 35 USC § 102(e) of Bowers et al. must be reversed.

II. Claims 26-29 and 34-35

Claims 26-29 and 34-35 were rejected under 35 USC § 102(e) as being anticipated by Bowers et al. Applicants disagree with this rejection, based on the following arguments given in the different sections below:

A. In regard to claims 26-29 and 34-35, the Office Action mailed September 10, 2003 states that Bowers et al. discloses all of the elements of claims 26-29 and 34-35, specifically relying on Figures 1 and 4, column 9-line 41 through column 10, line 21, column 8, lines 50-56 and column 11, lines 57-65. Applicants respectfully disagree that any of these sections of Bowers et al., whether taken individually or combined together, discloses the elements of claim 26.

Claim 26 recites:

- (a) providing information to the RFID device identifying a location;
- (b) interrogating the items with the RFID device to determine the identity of the items; and
- (c) associating the items with the location.

None of the sections relied upon in the Office Action disclose such a method and thus, the rejection is unsupported by the art and should be reversed. Fig. 1 of Bowers et al. is a schematic layout diagram of a library 10. Figure 4 of Bowers et al. is a sample of database records for tagged articles used by the library of Figure 1. Col. 9, line 41 through col. 10, line 21 of Bowers et al. discloses the steps of creating an inventory database, which as mentioned above, includes the following steps:

1. a fixed interrogator 43 or a portable RFID scanner 42 extracts the unique programmed serial number from the RFID tag 54 on the article 22;
2. a database record is added for the serial number; and
3. item identification information is obtained for the article and added to the database record for the respective tag serial number.

Col. 8, lines 50-56 of Bowers et al. simply states that Bowers' invention is not limited to the particular tag 54 shown and that the IC 62 outputs a data stream comprised of the 64 bits of stored data when sufficient power is applied. Col. 11, lines 57-65 of Bowers et al. discloses that the patron ID device may be incorporated into the interrogator and that to checkout, the patron places the ID card and the articles in a defined region and initiates a checkout process. The data output from the interrogator is communicated to the database either directly or via the computer terminal. As a result, none of these sections, taken alone or in combination, discloses the method of claim 26. Therefore, the rejection is unsupported by the art and should be reversed.

B. Regarding claim 27, the Office Action mailed September 10, 2003 states that Bowers et al. discloses interrogating an RFID element associated with a location. Applicants disagree. There is no mention whatsoever in the sections of Bower et al. cited by the Examiner which disclose, teach, or suggest interrogating an RFID element which is associated with a location. The only mention of RFID elements or tags is those RFID tags that are attached to articles, which will move to different locations throughout the library. (See column 7, lines 32-34 and column

8, lines 27-28 of Bowers et al.) There is no teaching a scanning an RFID tag to identify the location itself, as required by claim 26 and 27. To help clarify claim 27, claim 27 was requested to be amended in the Office Action Response faxed on February 10, 2004 to recite “wherein the location has a separate RFID element,” which is supported by the specification, for example, originally filed claim 21. In contrast, the specification teaches one embodiment of an RFID element associated with a location, which is a portable cart, as taught in the specification on page 23, lines 20-21. As taught in the specification on page 24, lines 1-13, the operator may scan the RFID tag on the cart to record the location of the items on the cart.

Regarding claim 28, the Office Action states that Bowers et al. discloses interrogating the items 22 in a series [Ka-452-11001, KA-456-11211, etc.] so that the RFID device 42 can determine the location of one item with respect to other items. Applicants disagree. There is no mention whatsoever in the sections of Bower et al. cited by the Examiner which disclose, teach, or suggest the step of arranging and interrogating the items in a series, so that the RFID device can determine the location of one item with respect to the other item. In contrast, one embodiment of such a method is described in the specification on page 24, lines 1-7, as follows:

An operator may use the hand-held RFID device and pass it by the cart in a particular order (for example, from left-to-right, and top-to-bottom). As the RFID device passes by the items, the device reads the items having RFID tags, and records and stores their positions on the cart. The RFID reader identifies the cart by reading a tag on the cart or by entering the cart identification information into the hand-held unit.

Therefore, dependent claims 27 and 28 recite elements not disclosed by Bowers et al. and should be independently allowable.

C. As a result, based on at least the arguments above in Section A above, claim 26 is not anticipated by Bowers et al., nor has the Examiner met his burden in establishing such a rejection, and the rejection should be reversed. Claims 27-29 and 34-36, which depend from claim 26 and add further limitations, are likewise not anticipated by Bowers et al. and the rejection should be reversed. Moreover, claims 27 and 28 are independently allowable for the reasons given in Section B. Applicants therefore requests the rejection of claims 26-29 and 34-35 under 35 USC § 102(e) of Bowers et al. be reversed.

ISSUE 2 (CLAIMS 20-23)

Claims 20-23 were rejected under 35 USC § 103(a) as being obvious in view of Bowers et al. Applicants disagree with this rejection, based on the following arguments given in the different sections below:

I. Claims 20-22

A. The Office Action mailed September 10, 2003 stated that Bowers et al. discloses a method of using an RFID device comprising the steps of determining whether the interrogated item 22 belongs to the location and providing a signal, specifically relying on column 12, lines 3-23 and column 15, line 42 though column 16, line 39, and that it would have been obvious to include the step of inputting information to the device to describe a location. Applicants respectfully disagree for the following reasons.

First, Bowers et al. does not show, teach or suggest the step of determining whether the interrogated item belongs in a location. Column 12, lines 3-23 of Bowers et al., which is specifically recited by and relied upon by the Examiner to support his arguments, teaches a method of ensuring that only articles which are properly checked out are removed from the library. To do this, Bowers et al. teaches that the status of each interrogated article is checked in the database, as the articles pass through the library exit. This "status" is whether or not the article is checked out or not, not the article's location. Column 15, line 42 though column 16, line 39 of Bowers et al. teaches a method of inventory scanning. Specifically, Bowers et al. teaches a method that involves scanning all article holding locations in the library, then comparing the detected serial numbers with the library inventory stored in the database that have not been checked out, so that a missing article report can be generated of all articles which are not located during the scanning process and which have not been checked out. In addition, Bowers et al. teaches a method of identifying mislocated or misshelved articles. However, this method does not include the step of determining whether the interrogated item belongs at the location. Instead, the method compares the call numbers of the articles scanned with the range of call numbers expected to be in the scanned portion 126. Any call numbers outside of the range of call numbers are presumed to be misshelved. It is only the call number that is used in this method taught by Bowers et al., not the location of the article. In fact, neither of these sections of Bowers et al. cited in the Office Action makes mention of the location of the article at all.

Second, with regard to the assertion that it would have been obvious to include the step of inputting information to the device to describe a location, Applicants disagree. Since there is no disclosure, teaching, or suggestion about the article's location, there is no motivation or suggestion to modify Bowers et al. as asserted in the Office Action.

In contrast, the present invention of claim 20 provides: inputting information to the device to describe a location; determining whether the interrogated item belongs at the location; and providing an appropriate signal.

As a result, because the reference does not teach all of the claim's limitations and because there is no motivation or suggestion to modify Bowers et al. as asserted, a *prima facie* case of obviousness has not been established. (See M.P.E.P. §2143.) Therefore, claim 20 is not rendered obvious by Bowers et al. and the rejection should be reversed. Claims 21-22, which depend from claim 20 and add further limitations, are likewise not rendered obvious by Bowers et al. and the rejection should be reversed. Applicants therefore requests the rejection of 20-22 under 35 USC § 103(a) of Bowers et al. be reversed.

B. Applicants note that the Examiner did not respond in the Final Office Action mailed September 10, 2003 to any of the arguments presented above, even though all the arguments were presented in Applicants' previous Office Action Response faxed on May 19, 2003. Instead, the Examiner's response seems only to be focused on whether or not one skilled in the art would combine the references absent some teaching, suggestion or incentive to support the combination, which really doesn't address any arguments relative to claims 20-22 considering there is only one reference cited against them.

C. As a result, based on at least the arguments above in Section A-B above, because the reference does not teach all of the claim's limitations and because there is no motivation or suggestion to modify Bowers et al. as asserted, a *prima facie* case of obviousness has not been established. (See M.P.E.P. §2143.) Therefore, claims 20-22 are not rendered obvious by Bowers et al. and the rejection should be reversed.

II. Claim 23

A. In regard to claim 23, the Office Action mailed September 10, 2003 states that Bowers et al. discloses a method comprising the steps of detecting the mislocated/misshelved item and providing an indication to the user of that location, specifically relying on column 16, lines 1+ of Bowers et al. Applicants respectfully disagree for the following reasons.

First, column 16, lines 1+ of Bowers et al. teaches a method of identifying mislocated or misshelved articles that does not involve the step of detecting where within the group of items a desired item should be placed and then providing an indication to the user of that location. Instead, as mentioned above, the Bowers et al. method compares the call numbers of the articles scanned with the range of call numbers expected to be in the scanned portion 126. Any call numbers outside of the range of call numbers are presumed to be misshelved. Bowers et al. teaches that a portable computer 122 may signal the employee to locate and properly shelve the misshelved article 22. There is no suggestion or teaching of providing the user an indication of that location where the article properly belong.

Second, with regard to the assertion that it would have been obvious to include the step of detecting where within the group of items a desired item should be placed, Applicants disagree. Since there is no disclosure, teaching, or suggestion about the article's location of where the article properly belongs, there is no motivation or suggestion to modify Bowers et al. as asserted in the Office Action.

B. Applicants note again that the Examiner did not respond in the Final Office Action mailed September 10, 2003 to any of the arguments presented above, even though all the arguments were presented in Applicants' previous Office Action Response faxed on May 19, 2003. Instead, the Examiner's response seems only to be focused on whether or not one skilled in the art would combine the references absent some teaching, suggestion or incentive to support the combination, which really doesn't address any arguments relative to claim 23 considering there is only one reference cited against it.

C. As a result, based on at least the arguments above in Section A-B above, because the reference does not teach all of the claim's limitations and because there is no motivation or suggestion to modify Bowers et al. as asserted, a *prima facie* case of obviousness has not been

established. (See M.P.E.P. §2143.) Therefore, claim 23 is not rendered obvious by Bowers et al. and the rejection should be reversed.

ISSUE 3 (CLAIMS 30 AND 32-33)

Claims 30 and 32-33 stand rejected under 35 USC § 103(a) as being unpatentable over Bowers et al. in view of Frich (U.S. Pat. No. 6,074,156). Claims 30 and 32-33 depend from claim 26. Claim 26 is allowable for at least the reasons given above in Section II regarding Issue 1. Therefore, claims 30 and 32-33, which depend from claim 26 and add further limitations, are likewise allowable and the rejection should be reversed.

Claim 31 stands rejected under 35 USC § 103(a) as being unpatentable over Bowers et al as modified by Frich as applied to claim 26 above, and further in view of Ghaffari et al (U.S. Pat. No. 5,708,423). Claim 31 depends from claim 26. Claim 26 is allowable for at least the reasons given above in Section II regarding Issue 1. Therefore, claim 31, which depends from claim 26 and add further limitations, are likewise allowable and the rejection should be reversed.

ISSUE 4 (CLAIMS 40-41)

Claims 40-41 were rejected under 35 USC § 103(a) as being obvious in view of the combination of Sone (US 2002/0,035,560 A1) and Cannon et al (EP 0,794,507 A2). Applicants disagree with this rejection, based on the following arguments given in the different sections below:

A. First, MPEP §2143.01 states:

The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990).

The Office Action mailed September 10, 2003 recognized that Sone fails to teach or suggest a system which provides an indication of the location of the item of interest. In addition, Applicants point out that Sone does not show, teach, or suggest the desirability of such a feature. Instead, Sone teaches an adaptively reconfigurable electronic information display (paragraph 0001) to display in a shopping display system item pricing indicators and other identifying information such as size, weight, unit price in a language, form, and format which is directed to the specific needs of a particular customer (paragraph 0008) upon the interrogator associated with the specific display

(paragraph 0032) interacting with the customers ID card (paragraphs 0012 and 0032). Each display presents information pertinent to the particular goods in proximity to the display panel (paragraph 0031). Sone teaches that its embodiment is helping the customer avoid purchasing an undesired item or desired item in an undesired quantity because of the large numbers of non-national language speaking people having to interact with local retail stores. (paragraph 006)

Second, even if Sone and Cannon et al. were somehow combined, the combination does not show, teach or suggest all of the limitations of claim 40. Cannon et al. does not show, teach, or suggest providing a step of interrogating the RFID card, where the RFID element on the card has the information stored related to an item of interest, and then providing an indication of the location of the item of interest relative to the location of the RFID card reader. Instead, Cannon et al. teaches that it is the electronic tag itself attached to the item of interest that provides an indication of its location by generating an active response, specifically by emitting a sound, or based on the active response from the electronic tag, the interrogator provides an indication of the tag's location. (See column 3, lines 2-20.) Claim 40 was amended in the Office Action Response faxed May 19, 2003 to more clearly recite that the information transmitted and stored in the RFID element relates to an item of interest.

As a result, because there is no motivation or suggestion to modify Sone as asserted and because the combination of references do not teach all of the limitations of claim 40 and, a *prima facie* case of obviousness has not been established. (See M.P.E.P. §2143.) Therefore, claim 40 is not rendered obvious by the combination of Sone and Cannon et al. and the rejection should be reversed. Claim 41, which depends from claim 40 and adds further limitations, is likewise allowable and the rejection should be reversed.

B. Applicants note that the Examiner did not respond in the Final Office Action mailed September 10, 2003 to any of the arguments presented above, even though all the arguments were presented in Applicants' previous Office Action Response faxed on May 19, 2003. Instead, the Examiner's response seems only to be focused on whether or not one skilled in the art would combine the references absent some teaching, suggestion or incentive to support the combination. Applicants assert in their arguments above in Section A that even if the references were somehow combined, the combination does not show, teach or suggest all of the limitations of claim 40.

In regard to the Examiner's Response to Arguments in the Final Office Action mailed September 10, 2003 that one skilled in the art would be motivated to combine Sone and Cannon et al., Applicants disagree. The Examiner makes a vague statement that "the primary reference to Bowers, and the secondary references to Frich and others are directed at item tracking system particularly in library embodiment." Applicants point out that Sone has nothing whatsoever to do with libraries and that the Examiner has not provided any teaching, suggestion or incentive support the combination to meet his burden under MPEP §2143.

C. As a result, based on at least the arguments above in Section A-B above, because the reference does not teach all of the claim's limitations and because there is no motivation or suggestion to combine Sone and Cannon et al. as asserted, a *prima facie* case of obviousness has not been established. (See M.P.E.P. §2143.) Therefore, claims 40-41 are not rendered obvious by Sone in view of Cannon et al. and the rejection should be reversed.

ISSUE 5 (CLAIM 42)

Claim 42 stands rejected under 35 USC § 103(a) as being unpatentable over Sone as modified by Cannon et al as applied to claim 40, and further in view of Marsh et al (EP 0,494,114). Claim 42 depends from claim 40. Claim 40 is allowable for at least the reasons given above regarding Issue 4. Therefore, claim 42, which depends from claim 40 and add further limitations, are likewise allowable and the rejection should be reversed.

ISSUE 6 (CLAIM 43)

Claim 43 stands rejected under 35 USC § 103(a) as being unpatentable over Sone as modified by Cannon et al as applied to claim 40, and further in view of Bowers et al. Claim 43 depends from claim 40. Claim 40 is allowable for at least the reasons given above regarding Issue 4. Therefore, claim 43, which depends from claim 40 and add further limitations, are likewise allowable and the rejection should be reversed.

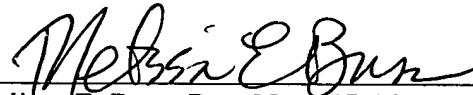
CONCLUSION

For the foregoing reasons, appellants respectfully submit that the Examiner has erred in rejecting this application under 35 USC § 102(e) and 35 USC § 103(a). Please reverse the Examiner on all counts.

Respectfully submitted,

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Date

By: 
Melissa E. Buss, Reg. No.: 47,465
Telephone No.: (651) 733-0649

Office of Intellectual Property Counsel
3M Innovative Properties Company
Facsimile No.: 651-736-3833

APPENDIX

1. An RFID device, comprising:

- (a) an interrogation source for obtaining information from an RFID element associated with an item;
- (b) an indicator for indicating information regarding one or both of (i) a class of materials to which the item belongs, and (ii) a desired location for that item.

2. The RFID device of claim 1, wherein the indicator provides at least one of an audible and a visual indication.

3. The RFID device of claim 1, wherein the device is portable and adapted for carriage and hands-free use by a person.

4. (Original) The RFID device of claim 1, wherein the information of step (b) is obtained from memory within the RFID device.

5. The RFID device of claim 1, wherein the information of step (b) is obtained from memory separate from the RFID device by upload.

6. The RFID device of claim 1, wherein the information of step (b) is obtained from the tag on the item.

20. A method of using an RFID device, comprising the steps of:

- (a) interrogating an item having an RFID element associated therewith;
- (b) inputting information to the device to describe a location;
- (c) determining whether the interrogated item belongs at the location; and
- (d) providing an appropriate signal.

21. The method of claim 20, wherein the location has a separate RFID element, and step (b) comprises scanning the RFID element associated with that location.

22. The method of claim 20, wherein the item is a library material, and the location is a library storage location.

23. A method of using a handheld RFID device for reading information from an RFID element, comprising the steps of interrogating the RFID tags associated with each of a group of items, detecting where within the group of items a desired item should be placed, and providing an indication to the user of that location.

26. A method of using an RFID device for identifying and locating items having an RFID element associated therewith, comprising:

- (a) providing information to the RFID device identifying a location;
- (b) interrogating the items with the RFID device to determine the identity of the items; and
- (c) associating the items with the location.

27. The method of claim 26, wherein the location has a separate RFID element, and wherein step (a) comprises interrogating an RFID element associated with the location.¹

28. The method of claim 26, wherein the method further includes the step of arranging and interrogating the items in a series, so that the RFID device can determine the location of one item with respect to other items.

29. The method of claim 26, wherein the items are library materials

30. The method of claim 26, wherein the location is a cart.

31. The method of claim 30, wherein step (b) comprises the passing the cart through a tunnel.

¹ Claim 27 is presented as if the Amendment Faxed on February 10, 2004 were entered by the Examiner.

32. The method of claim 30, wherein step (c) comprises passing the RFID device into or through the cart.

33. The method of claim 26, wherein the location includes a shelf having an antenna associated therewith.

34. The method of claim 26, further including the step of:

(d) displaying the items and their respective locations.

35. The method of claim 26, further including the step of:

(d) downloading the information in step (c) to a computer.

40. A method of locating an item of interest associated with an RFID element among a larger group of items each associated with an RFID element, comprising the steps of:

(a) providing a card having an RFID element;
(b) transmitting information related to an item of interest to the card and storing that information in the RFID element;
(c) positioning RFID card readers at positions near the item of interest;
(d) interrogating the RFID card with the RFID card reader; and
(e) providing an indication of the location of the item of interest relative to the location of the RFID card reader.

41. The method of claim 40, wherein step (e) comprises providing a visual display of the location of the item of interest.

42. The method of claim 41, wherein the visual display comprises a map of the area including the item of interest.

43. The method of claim 40, wherein the item of interest is a library material, and the larger group of items comprise other library materials.